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ABSTRACT

A study of teachers in the United Kingdom's Open University who used a computer mediated communications system called Cosy in 1988 was conducted to document their experiences with and attitudes toward the system. The results of interviews and analysis of log sheets revealed that: (1) the sample of teachers (n=10) showed a range in usage of the Cosy system from low to high, consistent with the expected range of use in the population as a whole; (2) all but 30% of the teachers reached the expected 20 hours a week online use; (3) teacher usage of the system decreased during the first year as extensive browsing gave way to developing more efficient ways for using the system; (4) the system was used for electronic mail, teleconferencing, and general conversation purposes; (5) factors affecting student usage included cost, workload, difficulties using the software, and disappointment with the conference results; (6) electronic mail and telephone usage were more popular than conferencing, but none of the three was as popular as the more traditional face to face exchange; and (7) typical of most innovations, those who had difficulty with the system used it less and were less enthusiastic about its continuation than those who found it easy to use. It was concluded that future use of the system would contain a less ambitious range of conferences, and that teachers would be better trained to use the system and to help their students use it. A discussion of home computing and its implications for distance education is included, as well as a copy of the interview schedule. A list of 76 studies from the Centre for Information Technology in Education completes the report. (DB)

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THE TUTOR PERSPECTIVE ON COMPUTER MEDIATED COMMUNICATION IN DT200: INTRODUCTION TO INFORMATION TECHNOLOGY

The Home Computing Evaluation Group in the University's Institute of Educational Technology has undertaken a variety of studies of student access to and use of the home computing facilities on the three courses requiring home access in 1988. The tutor evaluation reported here is concerned only with the communication facilities set up on DT200. Appendix one provides an outline of the Home Computing Policy, and its implications for learner support in distance teaching.

In November 1987, tutors participated in a weekend briefing by the course team, during which there was some opportunity for a hands on introduction to the practical activities involving the Amstrad, including the Cosy facilities. Once tutors had installed their computer at home (around January 1988) some could spend time familiarising themselves with the Cosy system and contributing to conferences. A group of 10 tutors from three regions agreed to participate in a qualitative evaluation of their use of Cosy during the year. They agreed to keep a log of all their contacts with students, but particularly those via Cosy. Eight out of ten of these tutors returned a complete log of cosy usage for the year, and participated in an interview after the examination, in November. The interview schedule used is shown in appendix two, and responses have been grouped around key issues.

These tutors are not a randomly selected sample of all 65 tutors in 1988, but their responses and use of the system is sufficiently varied to make the reader confident that the major issues identified here would also have been revealed by a much wider survey of opinion. Staff tutors have also been interviewed and material from briefing meetings has been brought in to qualify other evidence, where relevant.

THE TUTORS AND THE EXPERIENCE THEY BRING TO COSY

Five out of the eight tutors were completely new to the Open University, one had two years' prior experience and the other two had 10 or more. All had either technology or computing backgrounds but none had used Cosy before. Most had some experience with other systems like Prestel, TTNS, Telecom Gold Mail (Dec system at work place) and Dialogue (Sheffield University). All were in work elsewhere, in a variety of IT related posts:

Lecturer in Mathematics: College of Technology
Lecturer in Communications and Computer Studies: College of Building
Lecturer in Computing: University
Lecturer in Computing Science: Polytechnic
Head, department of Computer Technology: FE College
Researcher in Technological Changes: University
Senior Lecturer in Computing: HE College
Senior Lecturer, Educational Technology and Computing: HE College

Five tutors were based in Scotland, two in Yorkshire and one in Wales. Depending on their geographical proximity to the call up nodes for access to the OU's Academic Computing Service, tutors and students have to pay different call band rates. Table 1 below shows the rate per band, and the proportion of students estimated to fall in each band. Only the cost of 'cheap rate' is shown, students being advised to log on, whenever possible after 6.00 p.m. and at weekends. Students logging on at other times would have been charged the much higher rates for 'peak' or 'off peak' calls.

Table 1 'Cheap Rate' Call Band Rates

	1 unit (approx 5 pence) buys	approximate hourly rate	estimated percentage of students in each call band[1]
Local	6 minutes	50 pence	54.4
a band	1¼ minutes	£2	25.1
b1 band	60 seconds	£3	14.1
b band	45 seconds	£4	6.4

[1] data taken from responses to a questionnaire completed by finally registered students, some of whom may not have known their call band rate accurately. Base = 873.

Although just over half DT200 students were on the local call band rate, most of the tutors and students in this study were not. The tutor based in North Wales was on a band, and his students on b or c band. Only one of the Scottish tutors and most of his students were on the local call rate, the rest were on the more expensive rates. Even the tutors resident in the urban areas of Leeds and Bradford, had students who were paying b band rates.

THE EXTENT OF COSY USAGE BY TUTORS

Those tutors who kept a log up to the cut-off date of October 31st, 1988 recorded the dates on which they logged on and the amount of on-line time on Cosy. Inevitably, it was not easy for tutors to keep an accurate record of every minute's worth of their activity, and some records are estimates based on memory. Nonetheless, when we compare their total reported time on line, with that registered by ACS automatically, we find that the two readings tally quite closely. Table two shows that the discrepancy between tutor reporting and ACS records is around 10-15% in most cases - usually an under-recording by the tutor. On some occasions, ACS records have not always logged users accessing the system via unconventional routes, and this probably accounts for cases of apparent over-recording by tutors.

Two tutors also kept a record of the amount of time they spent off line (columns 7 and 8 of Table 2), and this suggests that, overall tutors spent as much if not more

time off-line, in the form of preparation, reading downloaded material and associated information. It seems safe to assume that the total amount of time tutors spent working on and with Cosy in this first year was at least double the total recorded time on line.

Table 2 Frequency with which tutor sample used Cosy : 1988

	TUTORS								
Duration	*	1	2	3	4	5	6	*	7	8
March	freq	5	22	6	3	13	3	freq	3	1
	on-line	1.27	11.38	5.00	1.11	7.30	2.27	on-line	.55	.20
								off-line	1.50	1.40
April	freq	4	7	10	5	3	7	freq	4	6
	on-line	1.39	4.37	1.01	0.58	1.20	5.00	on-line	1.07	1.10
								off-line	2.13	4.05
May	freq	9	6	8	3	25	4	freq	3	12
	on-line	2.04	2.20	3.24	0.12	2.57	2.23	on-line	1.00	3.44
								off-line	2.00	9.06
June	freq	4	5	8	2	28	0	freq	1	6
	on-line	0.47	1.56	2.20	0.33	2.20		on-line	.13	2.46
								off-line	.27	1.44
July	freq	3	0	5	7	8	2	freq	3	4
	on-line	1.00		0.55	0.56	5.00	2.04	on-line	.25	.44
								off-line	.40	.46
August	freq	0	4	4	3	8	1	freq	2	2
	on-line		1.1	0.27	0.48	5.00	.50	on-line	.21	.30
								off-line	.39	.25
September	freq	2	6	1	3	8	6	freq	2	11
	on-line	0.55	1.1	0.21	0.48	5.00	3.56	on-line	.32	4.39
								off-line	1.28	.37
October	freq	0	0			4	0	freq	0	2
	on-line					2.30		on-line		.20
								off-line		.0
TOTAL on-line		6 12	22.33	13.28	5.26	31.37	16.40		4.33	14.09
off-line									9.17	18.03
ACS registered usage+ on-line		9.09	20.29	8.89	8.22	34.44	16.69		5.64	12.92

* frequency with which tutor logged on
time spent on line } measured in
time spent off-line } hours and minutes

\+ measured in hours + % of whole hours

Are these tutors low or heavy users by comparison with tutors as a whole? Table three shows the number of hours on-line recorded by ACS for each tutor (Column 2), compared with the number of hours each of the sample tutors logged on-line according to their own records. This shows that the sample includes users falling within the low, medium and high groupings of the population as a whole. It does not include anyone at the extremes of the scale, but the range in usage (covering that of roughly 80% of all tutors) suggests that the comments and experience of these tutors is likely to touch on the major issues affecting most tutors.

Table 3: Cosy Usage Compared: Tutor Sample with Tutor Population

(1) No hours on line	(2) All		(3) Sample
less than 3	1		
3 to 4	5	19%	1
5 to 6	6		1
7 to 8	8		1
9 to 10	2	23%	
11 to 12	5		2
13 to 14	4		1
15 to 16	5	30%	
17 to 18	7		
19 to 20	1		
21 to 24	4		1
25 to 34	5	14%	1
35 to 44	5	- 8%	
45 to 54	2	- 9%	
over 55	4		

DID TUTORS USE COSY AS MUCH AS THE COURSE TEAM EXPECTED?

It is also now possible to compare national tutor usage of Cosy with the assumptions the course team had to make at the planning stage. These were made within the framework for tutorial provision already established within the Open University, whereby a full credit course is normally allocated up to 14 hours face to face tuition per tutor group. In many cases this amount is varied by regionally based staff tutors, whose responsibility it is to appoint tutors and allocate the tutorial budget for the region as they see fit. Experience may show that some courses require more face to face tuition than initially planned, while others can manage with less. In practice therefore, the amount of face to face tuition actually allocated to a course will differ to some extent regionally, reflecting local circumstances and the judgement of the staff tutor.

DT200, a full credit course, was allocated 14 hours of face to face tuition which the course team distributed between face to face and Cosy usage in the ratio 6:8. It was assumed that some face to face tutorials would be needed in the February to May period, to support students in their use of the PC as well as to sustain them through the inevitable early difficulties at the start of any new course. Students were to begin using Cosy from March 25th onwards, and the aim was to use this medium of communication to supply some if not all student needs for the latter part of the course, in addition to any tutorials and the use of the telephone.

While it was not possible to lay down rigid rules for tutors, clear guidance from the course team was that tutors were expected to log on at least around the time of

every assignment (of which there were 8) and the hope was that most tutors would get into a routine of logging on perhaps weekly or every two weeks, depending on student deadlines and workload. It seemed likely therefore that tutors would have to spend well over 8 hours on Cosy, given that students would be on the system for about 25 weeks. A working figure of 20 hours on-line time was agreed and all tutors were paid for the cost of twenty hours' telephone charges at the local call rate (with the facility for additional claims to be made by those on the more expensive call band rates.) This was also felt roughly comparable with the payment structure for face to face tuition, where tutors are only paid for the time spent at a tutorial, not for the preparation it requires or the time spent traveling. Thus a fee for eight hours face to face tutorial time might well require 20 hours work in total, and it seemed not unreasonable therefore to expect that a fee for eight hours tutorial work might cover 20 hours work on-line, at home.

In the event, one tutor (as it happens, one of those keeping a log as part of the evaluation) did 20.3 hours (on ACS records) on-line exactly, while 43 did less and 20 did more. Most tutors therefore should have had their telephone charges met - providing of course that they used the system during cheap-rate hours.

However one factor which could not have been estimated with any certainty at the planning stage was the amount of time tutors would spend off-line, preparing material for on-line use, learning how to use the system or simply reading material down-loaded to avoid on-line charges. The data in table 2 suggest that the total time spent on Cosy (both on and off line time) was often twice as much - if not more - than the time spent on line. It is possible therefore that 6 (10%) tutors spent a total time of 10 hours on Cosy work altogether (see Table 3), and a further 14 (22%) probably spent 10-20 hours. The rest (70% of tutors) have spent a total of 20 hours and well over that in many cases, in both on-line and off-line work on Cosy. 33 tutors however spent over 15 hours on-line and therefore probably spent 30 hours and upwards on Cosy work. The fifteen tutors (admittedly including 3 members of full-time OU staff) who spent 30 hours and more on-line obviously contributed many hours' worth of their time without pay - or the expectation that they could be re-imbursed for their enthusiasm. It seems reasonable to conclude that seventy percent of all tutors did at least 20 hours work (including off and on-line time) on Cosy and about half spent well over 30 hours.

HOW MUCH COSY USAGE IS ESSENTIAL?

It would be too early to conclude however that the course team's estimate of 20 hours on-line work is so out of line as to require changing, and indeed the same payment structure is to be used in 1989. A number of factors need to be taken into account in evaluating high tutor usage:

The 'first year' effect

Obviously tutors had to spend time learning the system during this first year, and some devised more economic ways of operating during the year which they will apply in 1989.

Tutor enthusiasm

Most tutors appear to have been very enthusiastic about this course, and their role in an innovative educational programme. For many people this personal interest (as a professional in the IT area) and enthusiasm has mattered more than just meeting the OU's baseline stipulation for usage. Tutors have read and contributed to conferences especially because they wanted to and not simply because they felt it was necessary in order to help students pass the course. It seems fair to draw this distinction (after interviews with the log tutors) notwithstanding the impossibility of separating off completely, 'tutor interest' from 'student success'.

Mode of Access to Cosy

Some tutors have access to Janet (the Joint Academic Network) and therefore the OU Cosy system at their place of work. Some of these staff used these facilities as well as their home computer, presumably because it served their professional needs outside the OU as well as within it. Again such very high users would probably not wish to justify all of their time as being solely directed at helping OU students pass the course.

For the moment therefore, it seems wise to monitor usage for at least one more year before considering that it might be necessary to adjust the expected usage to more than twenty hours on-line. There is not much evidence however to suggest that it would be reasonable to reduce the figure below 20 hours. Although 44 tutors did indeed spend less than 20 hours on line, any fixed target will mean that a number of tutors will do slightly more or slightly less than the target amount. Half the tutors have spent 15 or more hours on-line and given that many will not always have been able to use cheap rates, a fee for 20 hours connect charges can be justified.

It is of concern however that almost 20% of tutors did six hours or less on-line - an amount much less than the course team required and unlikely to have provided adequate support for students. Some follow up work at regional level is required here. Most tutors have spent well over 20 hours working on Cosy in one way or another. Equally plain is the current financial crisis facing the OU, as all other institutions of FHE. However desirable it might be to use Cosy for teaching and student support, the resources required for a considerable expansion of its role on this one course, are not available. And indeed, when we come to look at tutor interviews, the demand from students is for more face to face tuition rather than anything else.

CHANGES IN THE PATTERN OF COSY USAGE THROUGHOUT THE ACADEMIC YEAR

Most of the eight tutors interviewed said that they had changed the way they used Cosy as their experience developed, as their workload increased and as a reflection of the way students used or didn't use the system. In Scotland certainly, the arrival of the first telephone bill prompted radical re-thinking about the time that could be aforded on-line.

In general, tutor usage dropped off as the year went on. Some started off before March with quite extensive browsing round the system, some contributing to the national conferences already underway (though 'wiped' just before the students came on-line at the end of March). All tutors were involved in welcoming students on-line, submitting a résumé of their background for students and other tutors to read, putting items into the tutor conference for their own local group and responding to mail. After an initial flurry of these activities most people found that activity in their tutor group conferences fell off, and that only a minority of students - about a quarter or less - logged on regularly to see if they had any messages. This, together with the workload of marking 8 assignments from 15-20 students at a time, meant that many tutors logged on less often after May. Many tutors (see table 2) were still logging on weekly, nonetheless, and some logged on every few days throughout the course.

Tutors also developed more efficient ways for them of using the system. One of the highest users who spent a lot of time browsing the conferences in the early days, resigned from many of the national conferences and 'slimmed down' to about 5/6, including her tutor group and the Scottish Tutors conference. She also now downloads everything for reading off-line and uses the 'search' facility for finding relevant topics. Another tutor similarly downloaded a lot of conference material, though never found the time to read it. One tutor spent <u>less</u> time off-line as the year went on, finding it more economical of his time to reply to messages immediately, on-line. He commented on his log record as follows"

> "the time on Cosy is logged on time, not preparation time. Since then I have noted the amount of time spent preparing. This tends to be about the same as the time taken to upload the messages onto the system.... Also I have replied directly when reading the messages where an answer didn't need much contemplation to sort out the response. Much of the Cosy time has been spent browsing and trying to persuade those of my group who log on that they should be using Cosy for 'serious' stuff, not just chatting. I have a large proportion of students who aren't using Cosy much (if at all). I suspect the proportion is the same as that for non-attendance at tutorials."

<u>WHAT HAS COSY BEEN USED FOR</u>?

Some uses of Cosy have been indicated already, notably the use of E-mail for messages from and responses to the individual, and conferences for general conversations. Each tutor group started with a number of topics - chat, TMA, Block, Project; 'chat' was often the most popular. All tutors had tried to stimulate contributions to their tutor conference by putting in items themselves, whether personal reactions or summaries of interesting entries to the national conferences that they had been reading. Some tutors were more prepared than others to persist in attempts to 'activate' their tutor group conference, but it appears that for everybody, the use of E-mail had become more important than anything else, by the July/August period.

At least three tutors had used E-mail for comments on assignments (in addition to those on the script) and had tried out the conference for general comments on assignments overall. This was not continued much beyond the first assignment

because late submission by a small number of students means that there is a risk of their having information which gives them a clear advantage over those submitting on time. Some students in any case had said (in response to a tutor request) that they did not want to receive their grade and comments via E-mail; it may be that they simply did not want to increase the costs of study be having to log on to get information that would also come to them by post.

FACTORS AFFECTING STUDENT USAGE

Cost

The single most important factor affecting the extent of use by students was cost, in the opinion of tutors. This may be slightly over-stated in the case of the log sample given the high number of tutors and students on the B band rate (the most expensive). Nonetheless cost must be a factor where it can take several hours to get to know simply how to use the system. Even at £2 per hour (estimate for 'a band' at cheap rate) this can soon amount to £20 over the year, which is a lot for many of our students. (Students were told that they should be able to complete all the on-line activities within 10 hours.) When there was a proposal recently to increase the student fee by £20 for 1989, the Students Association spoke and voted overwhelmingly against the motion in Senate. Charges that may seem small to staff on professional salaries have to be seen in the perspective of students for whom they are an additional charge on top of the basic fee of £187 per full credit course, plus the cost of set books and possibly summer school.

So clearly for most students it was not financially desirable to log on for extended periods throughout the year. Having said that, tutors noted a number of factors which put students off who might otherwise have been prepared to use the system a little more than they did:

Workload

Most students found the workload on DT200 very heavy and were forced to give priority to those parts associated with assessment - which Cosy was not. In particular, the practical work took many students much more time than the 15% it contributed towards assessment. In these circumstances, Cosy became an optional extra and many exercised their option by not using it.

Difficulties in Using Cosy and the Oucom software

Some students had early problems using Cosy (and BT lines can always be difficult, especially for remote students) and many never got over these initial difficulties into confident usage.

Disappointment with the conferences

Even when students successfully got into the conferences they could be disappointed by their content: "they felt they were cluttered up with a lot of rubbish". Unfortunately students had no easy way of selecting particular conferences and by default had to work through conferences with tens, sometimes hundreds of entries, many of which could seem trivial and certainly not strictly

relevant to the tutor was that it was costing money to read all these messages, many students simply gave up reading all except their tutor conference.

THE MEDIA COMPARED: CONFERENCING VERSUS E-MAIL VERSUS TELEPHONE

Tutors were asked whether they felt one medium was more important than another. In response, interviewees talked about the different ways in which each medium was used and in all cases it was clear that both E-mail and telephone had been much more important than conferencing.

All tutors had experienced the obvious advantages of E-mail. Instead of having to write to or telephone everybody individually about matters such as tutorial dates and topics, holiday absences, reminders about deadlines and so on, messages could be created once only and sent to all members of the group in one action, using the 'group' facility on Cosy, though for those students not logging on at all, this might have to be duplicated by a letter or telephone call. Similarly most tutors used E-mail to send individual messages unless the student had telephoned them. Several mentioned the 1988 postal strike which occurred at a particularly crucial time for the OU, in August/September when students are submitting their final assignment and waiting for feedback before the exam. E-mail demonstrated the value at this time of having an alternative means of communication to the postal system.

E-mail did not obviate the need for the telephone though. All tutors stressed that there was no substitute for the telephone when students wanted to discuss something they didn't understand or simply wanted a chat. E-mail is alright for relatively straightforward and uncomplicated messages, but not where the student needs to explore something or to have an extended interchange of question and response. There had obviously been some different experiences here over requests to extend the deadline for an assignment. One tutor said his students never used E-mail for that - possibly fearing he might consider it impolite. Other tutors received quite a lot of 'late extension' requests by E-mail.

Students who regularly used E-mail, also on occasion used the telephone as well, and especially for any really urgent situation where an immediate answer was necessary. Some students much preferred the telephone and did not use E-mail at all. The telephone still retains its immense advantage in a distance teaching system, of carrying the human voice and providing a means of sensory contact with a teacher/tutor where virtually all other contacts are through the written word. One tutor assessed his students' reaction in this way:

> "Looking at the students comments in their essay on Computer Mediated Communication (done as part of course assessment), the standard conclusion seemed to be that Cosy is really only worth it for those who cannot access the course using the conventional means - the disabled, those in remote rural areas. 95% of them don't think its a universal substitute for distance education; in special circumstances, its worth the bother, but not otherwise. Its not a turnkey system like the telephone - in general that works. Cosy is still too caught up in the means [illegible] becoming an end in itself. There should be more

encouragement to use it - using it for more aspects of the course rather than an extra. I think its a very useful thing but its the learning and the time it takes, it doesn't have the features of TV and its as slow as handwriting. Its the same as going into print - you have to edit it and think what you're saying. Its as long as writing a letter - its not convenient and many students aren't touch typists...where it is great is in sending group messages, which I did maybe six times."

The tutor perspective is supported here by student responses to an in-course questionnaire although these results should be created with caution and as interim findings only. The questionnaire was completed in May when many students were only just starting to get into Cosy.. Just over half thought that conferencing was a less effective source of moral support than telephoning the tutor, and two thirds agreed with the statement that personal interaction is more difficult because of the lack of contextual and verbal feedback (see tables 4 and 5 below).

How would you compare conferencing with telephoning your tutor -

Table 4

As a means of getting help with your course-related difficulty:

A	Better	148	
B	As good	191	
C	Less effective	419	
D	Don't know	110	(Base = 868)

Table 4
As a source of moral support

A	Better	93	
B	As good	212	
C	Less effective	441	
D	Don't know	107	(Base = 853)

Table 5

Does your own experience generally support or contradict the following suggestions about computer-mediated communication?

	Agree	Disagree	Uncertain
1. Individuals can participate more equally in electronic than in face-to-face communication Base = 872	A 497	B 213	C 162
2. Computer communication is depersonalizing Base = 867	D 451	E 242	F 174
3. Computer conferencing encourages individual assertiveness Base = 869	G 373	H 207	I 289
4. Personal interaction is more difficult with computer communication because of the lack of contextual and verbal feedback Base = 860	J 600	K 134	L 126

Although the conferencing had been less successful than E-mail in 1988, tutors did not write it off. It had been an extra which the most enthusiastic minority had got something out of. "It gives students the opportunity for a very wide range of contacts." Tutors also felt that they might be able to generate more activity in the local conferences next year, by being in a better position themselves to advise students and by encouraging students to get to grips with the system earlier. One tutor reported that some of her students only got into Cosy at the end and would have appreciated it much earlier on. They said they would probably have had more time to use the system once the exams were over!

COSY VERSUS FACE TO FACE TUITION

All tutors reported that their students had wanted more face to face tutorials and did not find Cosy a substitute for group meetings. Only one region (Yorkshire) had allocated the minimum six hours face to face tuition, the rest had allocated more - up to 18 hours in Scotland. One of the Yorkshire tutors was particularly concerned by the lack of any face to face contact after May. She had had around 10 years' experience of OU teaching and felt that many of her students had probably felt more out of touch because they did not use Cosy and there were no tutorials after the beginning. Three out of her 21 students logged on regularly and they did feel in touch. All except the Yorkshire tutors had had more than six hours tuition allocated by their staff tutor.

Scotland

tutor 1 - 12 hours as six, two hour sessions, Glasgow and Edinburgh
tutor 2 - 18 hours as six, three hour sessions

tutor 3 - 14 hours as seven two hour sessions, Aberdeen and Inverness
tutor 4 - 11 hours as four, two hour and one, three hour sessions, Glasgow
tutor 5 - 10 hours as five, two hour sessions, Ayr.

N Wales

tutor 1 - 14 hours as seven, two hour sessions

Yorkshire

tutor 1 - six hours as three, two hour sessions,
tutor 2 - six hours as three, two hour sessions.

When asked whether they felt that students not using Cosy had been neglected - by default if not by intent - all except two felt confident that such students had not been neglected. The other two (including the tutor with only 3 tutorials) said that they had inevitably felt more in touch with those using E-mail, and all tutors stressed that, for those who used it, Cosy was an extra channel which must have improved the feeling of being 'in-touch' for those who used it. For most students therefore, Cosy had not created a more in-touch community or increased the accessibility of the OU, in its first year of operation. Most tutors had continued to send messages to students by conventional means - letter and telephone - because they knew many would not log on. For those who did log on, messages were also sent by E-mail, so that, where there were urgent messages that students must receive, tutors had to duplicate their Cosy message either in print or by telephone. Although Cosy undoubtedly added to the heavy workload for tutors in their first year, most could also see how it could make the tutor's role easier - if only all students logged on regularly. E-mail is a much quicker way of contacting a group of students, (certainly 15-20) than either telephone or letter.

Tutors from 4 regions (North West, Wales, West Midlands and Yorkshire) who attended a de-briefing meeting in Birmingham after the end of the course in November, also reported that students had wanted more tutorials. Those especially who were struggling with the course, or simply not on top of the work, did not find Cosy a substitute for face to face contact with their tutor and other students. One staff tutor reported that, having surveyed 37 students at a day school in Manchester, he found that 25 wanted more face to face contact, technologists primarily for discussion of the social issues in the course, and social scientists for help with the practical work. There was discussion of the possibility of 'tutor-less tutorials', providing the tutor group with a room where they could meet even though a tutor would not be present. And one or two tutors knew of 'self-help' groups who had gathered round a student with technical ability, prepared to give help to others. One tutor summed up a general theme from all tutors when he said that students had wanted more support using any available means, and that we should seek to meet their needs as far as possible; this would certainly mean providing more than six hours face to face tuition, but also making use of any rooms available for meetings, getting the technically able students to help those without such skills, encouragement to keep in touch via Cosy, and so on.

The tutor perspective is again supported by student responses to the in-course questionnaire. Well over half thought conferencing less good than face to face

tutorials, for help with course-related difficulties and as a means of socializing, though 367 (43%) thought it as good, or better 'for intellectual exchange'. Well over half found conferencing both more expensive and more time consuming (see tables 6-10).

How would you compare conferencing with face to face tutorials?

Table 6

As a means of getting help with course related difficulties

A	Better	95	
B	As good	156	
C	Less effective	527	
D	Don't know	95	(Base = 873)

Table 7
As a means of socializing

A	Better	56	
B	As good	101	
C	Less effective	611	
D	Don't know	79	(Base = 849)

Table 8
As a medium for intellectual exchange

A	Better	125	
B	As good	242	
C	Less effective	397	
D	Don't know	91	(Base = 855)

Table 9
In terms of cost to you, conferencing is:

A	More expensive	573	
B	About the same	199	
C	Less expensive	136	(Base = 848)

Table 10
In terms of time spent by you, conferencing is:

A	More time consuming	458	
B	About the same	163	
C	Less time consuming	222	(Base = 843)

TUTOR RELATIONSHIPS - WITH THE COURSE TEAM AND WITH OTHER TUTORS

Tutors were asked if Cosy had affected their relationship with the course team, to which one tutor replied, "what course team?" None of the tutors interviewed felt

that Cosy had made them feel part of the course team, although one said she at least felt she understood the dynamics behind decisions which she regretted but which the course team had had to take: "they are up against a wall". (A reference no doubt to the constraints imposed by large bureaucracies like the OU and British Telecom.) Also the effect of Cosy is to reduce status and role differentiation among participants so that in reading through conferences, it is easy to forget to check whether a participant happens to be a member of the course team, a tutor, or a student. However tutors' experience here is also likely to reflect one of the phenomena of OU course presentation, which is that only the course chair, course manager and possibly one or two other academic staff keep in close touch with the course in presentation. DT200 had exceptional 'back-up' in 1988 through the contribution of two members of the Institute of Educational Technology who had spearheaded the implementation of Cosy and responded on-line to many tutor comments. Nonetheless, one of the tutors who had logged on for more time than any of the others interviewed, said that Cosy had "shattered a few illusions", in that she had only got a course team response twice, to repeated questions about particular issues.

Tutors were however a little more positive about their contacts with other tutors. The Scottish Tutor Group Conference did help morale initially but it faded out once the workload increased with marking the first TMA and some tutors reverted to the telephone. None of the other tutors interviewed had had a similar regional link but one of the Yorkshire tutors had had contact with seven tutors in other regions -"on a variety of subjects from model railways to the course content -----building up a network of distant friends is really marvellous."

COSY EFFECTS ON THE TUTOR ROLE

All interviewees were asked whether Cosy had affected the way they did tutorials, marked assignments or 'chased-up' students whose progress concerned them in any way. Although the five new tutors had no previous OU experience as a baseline for comparison, their answers do not appear to differ significantly from those of the already experienced tutors. On the whole, neither tutorials nor assignment marking had been affected by Cosy, but progress chasing had been to some extent. It was easier to get in touch with students who were known to log-on. Failure to log on could also be a sign of potential problems and something to follow up.

A couple of tutors reported that Cosy had been a subject of discussion in tutorials, but one tutor had tried to use Cosy to prepare for tutorials. She had asked students to read particular items beforehand but found that none had done so. She also asked students for particular topics to be covered, but there had been no response. This tutor had used Cosy very successfully for passing on extra assignment comments via E-mail, but none of the others had used it in any significant way for this. One said that although she could see its potential here, it would also take more time and that was a problem.

When it comes to progress chasing, 3 tutors said they used the telephone - again reflecting the point made earlier that those who are really struggling tend not to use Cosy. But Cosy is very helpful for the few who do use it and could make a significant difference if most of the student group logged on.

ASSESSING THE FIRST YEAR AS A WHOLE

In spite of the obvious difficulties and disappointments with Cosy, all the tutors interviewed retained varying degrees of enthusiasm, and some had quite well developed ideas for how they were going to tackle Cosy in 1989. When asked whether there was a continuing need for evaluation, at least 3 tutors mentioned the fact that they had been learning the system in this first year, as well as the students, and that they would be much better prepared to advise in 1989. Conclusions on the basis of the first year alone could therefore be very misleading.

The workload on DT200 as a whole has been particularly great, and out of the 65 tutors nationally, it is known that 3 or 4 have resigned simply because of workload. One of the tutors interviewed will not be tutoring next year, but he stressed that this was only because of promotion at work. Two tutors - one new, one with 10 years OU experience, both said they had wondered whether or not to carry on next year but decided to do so:

> (in answer to the question, "Has it affected the way you feel about working for the OU?")
>
> "No, not really...every TMA was a crisis point, plucking up the courage to mark all those essays. I'm not used to marking essays and I gave serious consideration to whether to continue. But next year will be better...I've found the course very stimulating."
>
> (new OU tutor)
>
> "The workload has been impossible this year...it has been impossible to get to grips with all the units and the practical work. I did seriously consider whether I should continue next year, there is so much work (previously a T101 tutor-counsellor) ...but overall I do think its a very interesting and a very good course, and there are bound to be problems in doing something innovatory."
>
> (tutor with 10 years experience)

Other tutors had also found the course stimulating and retained quite a lot of their initial enthusiasm:

> (In answer to the question, "What for you has been the most important thing about Cosy?")
>
> "Cost is the over-riding thing, but it has great potential...I'm still interested in it as an experiment, but disappointed it hasn't worked better...I'm not convinced its ever going to be an educational medium - its so slow and unresponsive, and the course team would have to put more time into it and pay tutors more. Its good for admin though...E-mail is the best used because its quickest and cheapest. I used a lot of techniques but the local conferences never got very interactive after the first couple of months...I've really enjoyed tutoring it though."

> "A slight feeling of disappointment about things not coming to fruition. Remote students didn't take it up. They were put off in the early days by bad telephone lines and technical problems...but its been valuable to students to use the system...I see prospects for it. Using IT is important in itself - not just reading about it."

Only 1 tutor actually said that Cosy made him feel more enthusiastic about working for the OU, but the use of IT as part of the learning experience does still seem to be a factor in tutor enthusiasm for the course. One tutor reported a degree of frustration that Cosy was not used more: "Why do we have to keep on filling in forms?" And several had been amazed by the failure to use Cosy effectively to let all tutors know about a change in mid-course, to one of the cut-off dates for an assignment. This seemed a classic instance when the system could come into its own, and instead tutors spent hours in some cases, searching conferences until the message was found in a most unlikely place.

Tutors felt that Cosy had made a difference to at least a minority of their students, as this tutor suggests:

> "Some have really appreciated it - its made them feel less isolated, and given them quicker feedback on assignments. A lot thought it would make more difference than it did though. They hadn't really considered the costs...probably about a quarter really enjoyed using it but they can't afford to log on daily...its not a very economic system to get on and off quickly...I'm very keen to get people to use IT - I would encourage people to use it...It's been fairly successful this year and if refined, it could be more successful."

CONCLUSIONS

A number of points can be drawn out of the preceding discussion.

The first point concerns the status of CMC work on DT200, which it would be more accurate to see as a development project than as a pilot. The potential is still being developed by tutors, in a process of trial and error, where firm conclusions might be particularly misleading on the basis of very early experience. These findings are therefore, strongly conditioned by circumstances, some of which (like tutor experience) may change and become a more positive influence over time, others of which (like the cost of telephone call charges) might be more difficult to change but could be less significant for a different student population. The cost of OU study is already high for many of our undergraduates and the degree programme presents very sharp constraints on any new developments which increase costs. Course costs might not be so tightly constrained on courses funded by the corporate sector however.

Having made these caveats, interim conclusions can be drawn. CMC has proved its potential as

- a carrier of administrative and course-related rather than course content messages

- a source of helpful ideas, advice and interesting discussion for a minority of students who log on regularly

Its potential still seems to be a possibility, but has yet to be proven, in these areas:

- enabling tutors to give more feedback (follow-up teaching on assignments largely) and earlier feedback to their own students
- channeling information in-course, from the course team to tutors and students
- increasing the amount of interaction between all tutors and students nationally.

If we relate these operational goals to the hoped for benefits for distance teaching outlined in appendix one, it becomes clear that CMC still has a long way to go, in turning the rhetoric into reality, in each of these areas. We will consider each in turn.

Improved teaching?

Tutors see the potential of CMC for teaching (as opposed to more general communication), but so far, no significant benefits have been achieved - from the tutor perspective. If anything, E-mail has been more important than conferencing.

Greater independence for students?

Yes, for a minority, perhaps a quarter of all students. For the majority, Cosy and CMC has been marginal. With more time and experience (and less pressure from other course work) many more students could have become active users. But confidence needs to be developed and early experiences were often off-putting.

Improved support for students?

Yes, for those who log on regularly. But by reducing face to face support, many students were not as well supported as they would otherwise have been, although that is a by-product of CMC not a direct result. What is important, is that for students who were struggling, CMC did not represent a viable alternative to other forms of tuition. CMC is an addition to existing media here (not an alternative).

A more open teaching system?

Certainly a more exposed system, where messages can be sent (to tutors or course team) and the timing and adequacy of the replieswill be equally visible. But there are many positive experiences too, and some topics on the national conferences generated debate which was lively and extensive. Tony Bates (a member of the course team) initiated and responded to a student debate on the role of IT in education, for example. Students were able to moan on-line about things they disliked and thus lots of individual views (negative as well as positive) got a public hearing in a forum which included staff as well as students. So yes, a system more open in that way: a more open community. But more open teaching has not yet developed, if by that is meant student influence on what is taught and a greater flexibility in the way things are taught, in response to student input.

Cosy and CMC in 1988 suffered somewhat from 'the first year effect'. In 1989, there will be a less ambitious range of conferences and tutors will be armed with all the information they need - and some new strategies - to help students. Overall, we might expect that 1989 will see an increase in the number of students who make effective use of it. Tutors are undoubtedly enthusiastic about the course, and a part of that enthusiasm is about participating in CMC, a form of IT in action.

Mary Thorpe
April 1989

APPENDIX ONE. HOME COMPUTING AND SOME IMPLICATIONS FOR DISTANCE TEACHING

1988 marked the first year's operation of the Home Computing programme in the Open University (OU), enabling courses to be presented which require all students to have reliable regular access (almost always therefore, home access) to a microcomputer meeting the agreed OU specification. The same requirement is also made of tutors, as a condition of their employment for courses in this programme. The minimum specification is as follows:

- MSDOS (operating system)
- GEM (Graphics Environment Manager)
- 512K RAM
- Single Disc Drive
- Keyboard (PC/AT)
- Monitor (monochrome)
- Parallel Port (centronics for printer connection)
- Serial Port (RS232 or equivalent)
- Mouse (or other printing device)
- Printer (80 column, 100 cps)

The University chose the Amstrad PC1512 as the model capable of meeting these requirements, and available to students and tutors either for rental (at £150) or for purchase (£430 for single disc drive, monochrome monitor, 1988 prices).

The Department of Trade and Industry provided a grant to the OU to enable the purchase of a pool of machines for rental to students and tutors on the three courses included in the Home Computer programme in 1988. The University's Institute of Educational Technology has undertaken a major evaluation of access to and use of these machines during 1988, and this is one of a series of papers produced.

CMC AND ITS IMPLICATIONS

Students use their machines for both practical work and communication. Most students spent more time on the former, in tasks such as learning specific IT skills (Word processing, data-base construction, spreadsheet analysis) and accessing sources of information (on-line and off-line course-based data bases). In addition, the computer is used for communication on DT200 in 2 main ways:

(a) Through the provision of a very wide range of conferences which can be read and to which messages can be sent. There is also a small number of 'read only' conferences

(b) Electronic mail (E-mail) - students, tutors and course team can send private messages to each other.

The system used is that developed by the University of Guelph, Canada - Cosy - together with specially written software (OUCOM) to enable automatic dial-up and connection to Cosy with a few key strokes, an off-line editor and an optional menu bar when on-line. Students can 'pull-down' the menu and choose a command if at a loss for the correct word to enter themselves.

From January 1988 onwards, tutors were able to use both conference and E-mail facilities set up on Cosy, and from mid-March onwards, students were encouraged to use the system, both as an instance of IT in action, and as an additional means of communication with their tutor and all other tutors and students on the course. From February 1989, these students will be studying other courses, and a new intake of DT200 students will be starting the course and introduced to Cosy. For an enthusiastic minority who wish to continue Cosy use after completing the course, an Alumni conference has been set up, although they will not be allowed to contribute to the conferences of the new student intake, unless invited.

Mason has identified three main ways in which CMC has been used:

Fully on-line courses -	students download course texts for working on off-line and pursue extensive interaction with tutors and other students, off-line. The course population may be international
Adjunct to face to face courses -	One aspect of a conventional course may be tackled on-line e.g. discussion of an article or assignment.
Addition to distance education courses -	CMC provides an additional channel of communication between students and tutors physically at a distance from each other. It offers the potential for regular communication, otherwise impossible to achieve.

This paper deals with the third of these contexts for CMC, within which a number of different types of usage in distance education can be listed:

1. course texts available on-line rather than hard copy mailed to students
2. additional readings selected by tutors/students made available on-line during the course
3. student assignments sent to tutor via electronic mail
4. tutor grade and comments on assignments returned to students via electronic mail
5. students and tutors able to send and receive private mail to/from tutors and other students
6. student group able to participate in conferences with their tutor
7. all students able to participate in conferences open to all students and tutors
8. all tutors able to participate in conferences open to tutors and other staff only

9. all participants can request a particular conference group to be set up.

In order to ensure the course was as open to as many students as possible, the DT200 course team chose to implement the facilities for items 5-9 inclusive. At present therefore, course material is not sent to students electronically; conventional surface mail is used. Similarly students do not send their assignments to their tutor electronically but on the conventional postal system. (Though see comments below on assignment feedback to students). Cosy has been used as an additional medium of one to one and of group communication, enabling students to send private messages to each other, to their tutor and to the course team, as well as to join in conversation either in small groups locally or through the national conferences set up and moderated by the course team.

The unique features of this communication are as follows:

(a) user controls - the receiver reads and replies to their message(s) when they choose to do so.

(b) asynchronous - the computer stores all inputs and allows any member to read and add messages at any time. Unlike oral exchanges, participants do not need to agree to interact at the same time.

(c) text processing - text can be down loaded and put onto hard copy. There may be editing facilities to enable text amendments before up-loading.

(d) text access and structuring - there may be facilities to search according to date, key word, sender etc. Inputs can also be moved by a moderator of a conference.

These features of CMC mean that it has - in theory - considerable potential for distance teaching because of the greatly enhanced possibilities for communication at a distance that it offers. In the context of the Open University, CMC has been introduced so as to test out this potential in a number of areas of course presentation:

1. Course related information, generated by the course team

   - Messages (of clarification responding to questions, updating and so on) can be left in the appropriate conference, so that all students and tutors can read them.
   - Individuals can also receive messages via E-mail.

2. Student queries and comments to tutors and course teams

   Students can use both conferences and E-mail to ask questions, ask for help and simply comment on their reactions to the course.

3. Student dialogue with each other

Students can set up conversations for small groups to exchange information and chat about the course.

4. Tutor messages to own student group

   Tutors can run an on going tutorial about their course on the local conference set up for each group, and can post messages of information relevant only to their group e.g. times of tutorials, topics for tutorials, feedback on assignments, and so on.

5. Tutor messages to individual students

   Tutors can use E-mail to answer individual queries or to send messages which will be received by the student as private mail. There is a facility also to send the same message to a group of individuals.

6. Tutor messages to other tutors and to the course team.

   Tutors can both contribute to the national conferences and 'converse' privately with each other and members of the course team.

Eight national conferences were set up in 1988 and these together with the E-mail facility and the local conferences set up for each tutor group appear to offer a means of overcoming virtually completely the communications barrier created by distance. As in face to face teaching, the student is now able to ask questions of the course author and of any of those involved in teaching, when problems arise, or when the issue becomes important. Not only can their questions be answered, but course authors/tutors can also make comments or emphasise additional points, in response to the feedback of students. And students themselves can chat late into the night, if they wish, as it is possible for conventional undergraduates to do. Thus CMC offers the possibility, in theory, of two major advances in distance teaching:

1. An <u>additional medium</u> for communicating information otherwise sent by mail or telephone, and therefore a duplicate system which may have advantages of convenience or speed.

2. A <u>new</u> medium, creating channels of communication that have not previously existed or been made impracticable because of the effects of distance.

The hoped for benefits of this can also be suggested, although there has been no official statement of the expected goals for CMC. There seem to be four major areas where benefits might be realised:

- Improved teaching

  - Because it is now possible for a continuing dialogue between students and staff, responding to the particular needs and interests of each year's student body

- Greater Independence for Students

    - Because through greater opportunities for interaction, students can articulate better their own learning and actively develop it in collaboration with others

- Improved support for students

    - Because of the increased channels for communicating with a tutor and other students

- A more open teaching system

    - Because of the opening up of communication between course team and students, and between each local student group and the course population as a whole.

None of these potential benefits mentions resources, and in the short term, CMC can only be more expensive than the existing system, because it has been added on to that system as an extra rather than as a replacement for some of its components. The obvious costs of adding on CMC to the conventional tutor role are the need to pay tutors for connection charges, discs and printer paper, the use of staff in Academic Computing Service to maintain the Cosy system, and the telephone bill charges to students. A full costing of Cosy ought also to take into account the set-up costs, in the form of staff time in designing and implementing the system initially, and the costs of its evaluation.

The additional fee paid to tutors to cover connection charges, paper and discs was £1,950 in 1988 (£30 x 65 (tutors)).

Although this additional payment to individual tutors (£30) represents a very small proportion of their fee for the year (around 3%) the costs of using CMC would be much greater if it were used to replace face to face and telephone tuition. And the bulk of payments to tutors is generated by their marking of assignments - a cost which could not be reduced even if grades and comments were communicated electronically rather than by mail. The only possibility for resource saving might be through a reduction in tutorial staff, but even this might not generate any significant savings, even if it were to be practicable. The same number of assignments would have to be marked, and if there were fewer staff, they would have to work longer hours for the University to cope with the workload of a much larger staff: student ratio

Any discussion of potential savings from CMC of course assumes that CMC is actually capable of substituting for some aspects of what tutors currently carry out. One purpose in using CMC on DT200 however, has been to explore its potential and to test out all its apparent benefits to see whether they are realisable in practice. Cost cutting was never one of the goals of its implementation whatever possibilities for the effective use of resources it may open up in future.

APPENDIX TWO. THE INTERVIEW SCHEDULE

1. What previous experience (if any) with the OU do you have?

2. Have you used Cosy before, or any other form of CMC?

3. What for you have been the most important things about Cosy - positive and negative?

4. Have you used Cosy consistently throughout the year or have you changed the way you've used it?

5. Are you going to use it differently next year?

6. What differences do you think it has made to students this year?

7. E-mail v. Conferences v. telephone

- Is one more important than the other
- Are the same students active in both?
- Can you rely on E-mail or is the telephone still best?
- Does E-mail reduce telephone calls?
- Do students use E-mail and telephone for different things?

8. Has Cosy affected (a) the way you do tutorials? (b) assignment marking? (c) progress chasing with individual students? (d) your relationship with other tutors? (e) the course team?

9. Does Cosy make some things easier for you?

10. Does Cosy make some things more difficult?

11. Does Cosy affect the way you feel about working for the OU?

12. What should the OU use Cosy for in future?

13. Are there any other issues you would like to see evaluated?

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